

## REMARKS

Applicant is submitting herewith a Request For Continued Examination and Applicant is submitting the present amendment to provide arguments in support of the amendments presented herein.

The claims in the application are claims 1 to 7, claims 3 and 7 drawn to a linear rolling bearing stand allowed. The remaining claims are now drawn to a method of producing a linear ball bearing having a guide carriage designated as a bearing body and having a leg section with an upper groove with an approximately semi-circular cross-section for load bearing balls and a lower groove with approximately a quarter circle cross-section for load bearing balls.

In the parent application, claims 1, 2 and 4 to 6 were drawn to a linear ball bearing were rejected under 35 USC 102 as being anticipated or under 35 USC 103 as being obvious over the Tonogai patent. The Examiner was of the opinion that the reference showed a linear rolling bearing as claimed with a guide carriage with a U-shaped cross section in Figure 8 having a U-cross bar and two U-legs whereby the guide carriage forms a carriage cavity and partially surrounds a guide rail while being slideably supported through balls on two longitudinal sides of the guide rail. Each U-leg of guide carriage having on an inner surface opposing the guide rail a ground raceway with an approximately quarter circle cross section for the balls and a stop surface 21 with a

retaining contour for a guide member 50 containing the balls B configured on a guide rail-distal outer surface of each U-leg of the guide carriage.

Applicant respectfully traverses these grounds of rejection since it does not apply to claims 1, 2 and 4 to 6 which are now drawn to a method of producing a linear ball bearing.

The Tonogai et al reference discloses a linear ball bearing having a guide carriage designated as a bearing body and has a leg section with an upper groove with an approximately semi-circular cross-section for load bearing balls and a lower groove with approximately a quarter circle cross-section for load bearing balls. A drawback of this configuration lies in the continuation of the radius of the upper groove up to the inner vertical wall of the leg section which necessarily means that for making the upper groove by grinding, a small grinding wheel must be used.

Because of the semi-circular cross-section of the upper groove for the load bearing balls, Tonogai et al is unable to use a grinding wheel corresponding to Applicant's construction and method which calls for a raceway 10 with an approximately quarter circle cross section for the balls 3 to be made by a grinding wheel 18 whose diameter is larger than a diagonal dimension of the carriage cavity and whose axis of rotation 19 is situated outside of the guide carriage 1 thereby forming an acute angle  $\alpha$  with an axis of symmetry 20 of the guide carriage 1. The advantage obtained by

Applicant's construction is that Applicant's grinding wheel has a large diameter as discussed on page 1, the last paragraph through line 3 of page 2 wherein it is stated that at the same speed of rotation, a higher peripheral speed is obtained with the grinding wheel having a large diameter rather than a wheel having a small diameter. With a larger diameter, a higher grinding performance and a prolongation of the duration of the wheel are obtained. The rotational speed of the grinding spindle cannot be infinitely increased because this would lead to a destruction of the bearings.

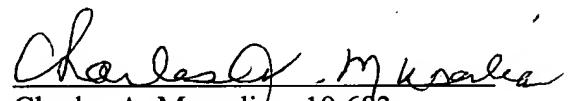
This advantage is not taught by Tonogai et al and therefore, Tonogai et al neither anticipates nor renders obvious Applicant's invention since it does not have the characterizing portion of Applicant's invention whereby a stop surface has a retaining contour for a guide member containing the balls is configured on a guide rail-distal outer surface of each U-leg of the guide carriage and the raceway on one of the two U-legs and the stop surface has the retaining contour on the other of the two U-legs made in common in one work step by the grinding wheel. Therefore, it is deemed that Tonogai et al does not anticipate or render obvious Applicant's invention.

Applicant's application gives a detailed description of known methods to grind raceways and all these known methods have the drawback of high machining costs and/or a prolonged machining time. In the case of small grinding wheels, the surface does not have the required quality and all of these drawbacks are eliminated by Applicant's

method. As shown in the drawings and the detailed description of Applicant's specification, the grinding wheel permits the grinding of the stop surface of one of the two U-legs and therefore, Applicant's method has an inventive step and withdrawal of this ground of rejection is requested.

In view of the amendments to the claims and the above remarks, it is believed that the claims clearly point out Applicant's patentable contribution and favorable reconsideration of the application is requested.

Respectfully submitted,  
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Enclosures